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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,860

09/06/2006

Meiten Koh

Q96559

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EXAMINER

BUIE, NICOLE M

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,860	Applicant(s) KOH ET AL.	
	Examiner NICOLE M. BUIE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060906</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-9 and 15-20, drawn to ionic liquid type functional material.

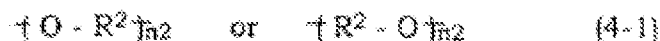
Group II, claim(s) 10-12, drawn to aromatic compound.

Group III, claim(s) 13 and 14, drawn to fluorine-containing polymer.

The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: while an aromatic compound which has a fluorine-containing ether chain and is represented by the formula (4):

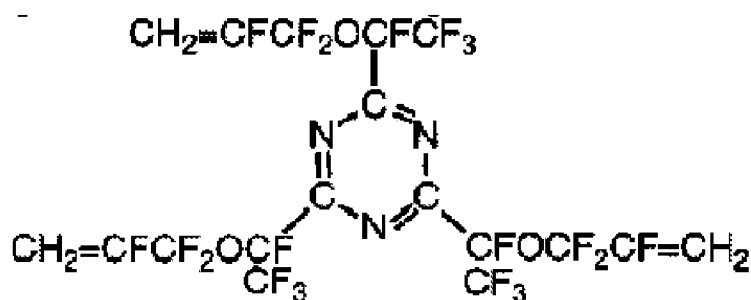


wherein $-D^2-$ is a fluoroether unit represented by the formula (4-1):

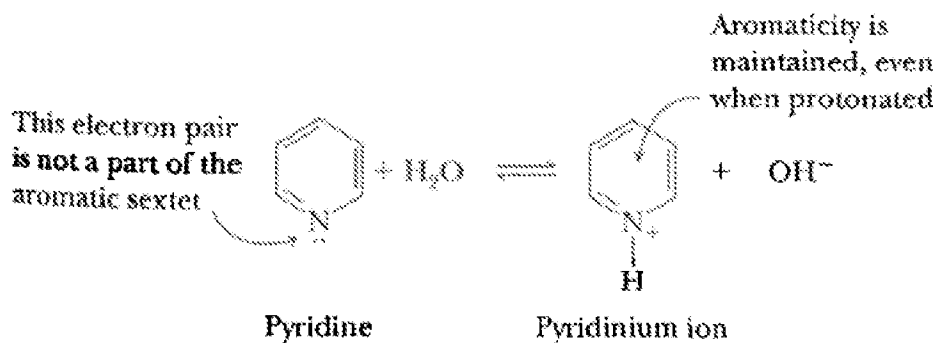


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in which R^2 is at least one selected from divalent fluorine-containing alkylene groups having 1 to 5 carbon atoms in which at least one of hydrogen atoms is replaced by fluorine atom; n_2 is an integer of from 1 to 20, and when m_2 is not less than 2, two or more of D^2 may be the same or different; R_y^3 is a mono-, di-, tri- or tetra-valent organic group having 2 to 30 carbon atoms which has at least one of amines and/or salts of amines and contains an aromatic ring structure; R_x^2 is a fluorine-containing alkyl group having 1 to 20 carbon atoms, and when m_2 is not less than 2, two or more of R_x^2 may be the same or different; m_2 is an integer of from 1 to 4, provided that a unit of -O-O- is not contained in said formulae (4) and (4-1) is shared between all three groups, it doesn't offer contribution over the prior art, because said aromatic compound is disclosed in Morita (JP 10237130 A, see machine translation for citation) ([0027]) as evidenced by Brown et al., Organic Chemistry, second edition, 1998, pp.849-850, see structure below:



When the structure as shown above is dissolved in water the nitrogens in the aromatic group are protonated, therefore forming an ionic compound as evidenced by Brown et al. pp. 849.



During a telephone conversation with Attorney Abraham Rosner (Reg. # 33,276) on 07/31/2008 a provisional election was made without traverse to prosecute the invention of **Group I, claims 1-9 and 15-20**. Affirmation of this election must be made by applicant in replying to this Office action. **Claims 10-14** are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 8, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "...provided that a unit of -O-O- is not contained in the structural unit M2 and the formula (2-1)" in lines 13-14. There is insufficient antecedent basis for this limitation in the claim. For the purpose of this Office Action, the said limitation will be treated as follows: provided that a unit of -O-O- is not contained in the structural unit M2.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

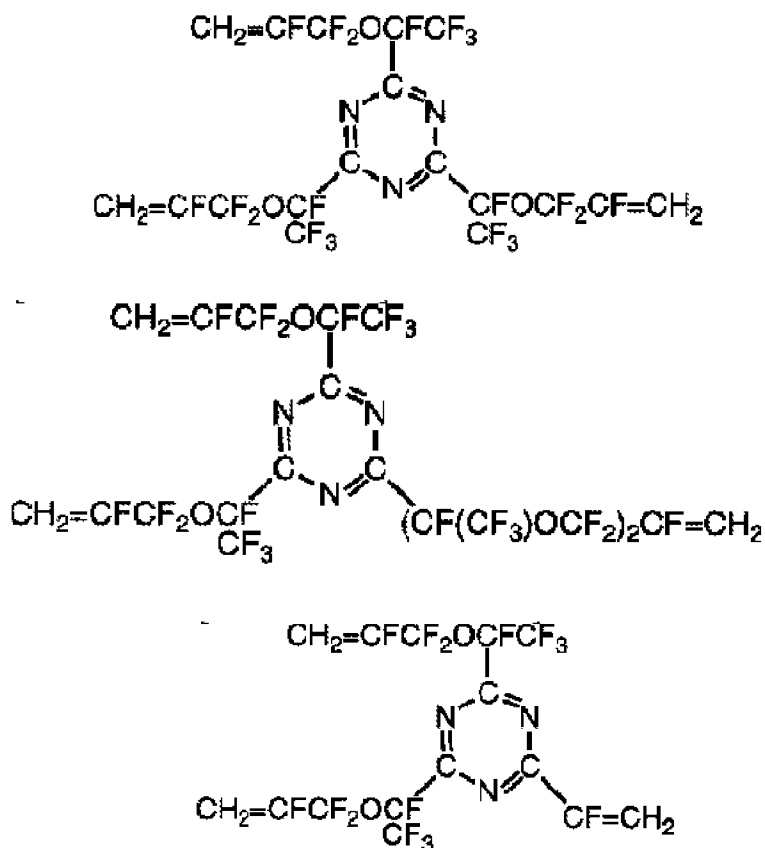
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

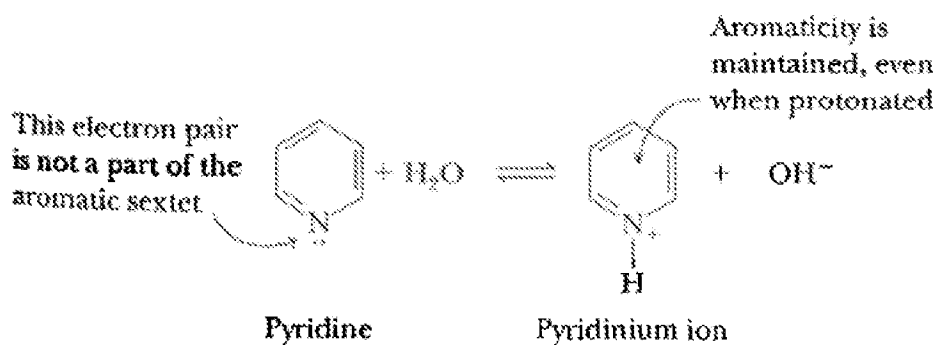
Claims 1- 5 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita (JP 10237130 A) as evidenced by Brown et al., Organic Chemistry, second edition, 1998, pp.849-850.

Regarding claims 1-5 and 15-19, Morita discloses an ionic liquid type functional material [0015] comprising an aromatic compound which has a fluorine-containing ether chain ([0027]-[0030]) and is represented by the formulas:

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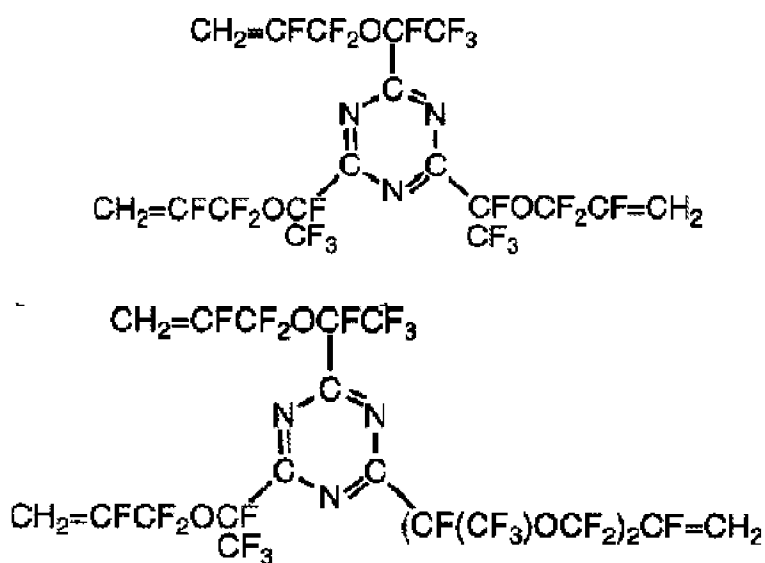
where the cyanogen group can be converted to a carboxylic acid group [0016]. When the structure as shown above is dissolved in water the nitrogens in the aromatic group are protonated, therefore forming an ionic compound as evidenced by Brown et al. pp. 849 showing an aromatic imine compound.



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Claims 6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita (JP 10237130 A).

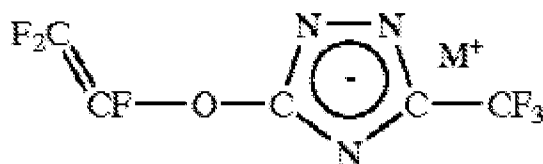
Regarding claims 6 and 9, Morita discloses an ionic liquid type functional material [0015] comprising a fluorine-containing polymer containing a nitrogen containing aromatic compound ([0027]-[0030]), such as:



Morita further discloses homopolymerization or copolymerization of a nitrogen containing aromatic compound [0014] (Therefore, for the homopolymer, the amount of M1 is 100% by mole and the amount of A1 is 0 % by mole).

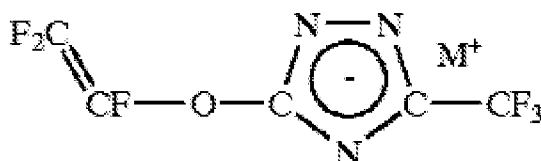
Claims 1-3, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Armand et al. (US 2004/0023092).

Regarding claims 1-3, 15, and 17-19, Armand et al. discloses an ionic liquid type functional material (Abstract, [0026]-[0027]) comprising an aromatic compound which has a fluorine-containing ether chain ([0026],[0027]) and is represented by the formulas:



Claims 7, 8, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Armand et al. (US 2004/0023092).

Regarding claims 7, 8, and 20, Armand et al. discloses an ionic liquid type functional material (Abstract, [0026]-[0027]) comprising a fluorine-containing polymer containing an aromatic compound which has a fluorine-containing ether chain ([0026],[0027]), such as:



Armand further discloses homopolymerization of a nitrogen containing aromatic compound [0105] (Therefore, for the homopolymer, the amount of M1 is 100% by mole and the amount of A1 is 0 % by mole).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible

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harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

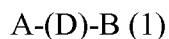
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

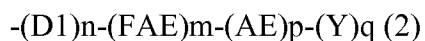
Claim 1 is directed to an invention not patentably distinct from claims 1 and 2 of commonly assigned 11/664,538.

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 11/664,538.

Although the conflicting claims are not identical, they are not patentably distinct from each other because Application No. '538 recites an ion conductor comprising an aromatic compound which has a fluorine-containing ether chain and is represented by the formula (1):



wherein D is represented by the formula (2):



where D1 is an ether unit having a fluoroether group in its side chain and represented by the formula (2a), which corresponds to the OR group of the instant claim:



where R_f is a fluoroether group which may have a crosslinkable functional group; R_1 is a group or bond bonding R_f to a trunk chain; FAE is an ether unit having a fluorine-containing alkyl group in its side chain and represented by the formula (2b):

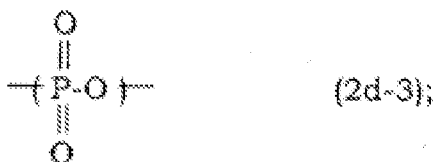


where R_{fa} is a fluorine-containing alkyl group which may have a crosslinkable functional group; R_1 is a group or bond bonding R_{fa} to the trunk chain; AE is an ether unit represented by the formula (2c):



where R is a aromatic hydrocarbon group which may have a crosslinkable functional group; R_1 is a group or bond bonding R to the trunk chain; Y is a unit having at least one of the formula (2d-1) to (2d-3):

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n is 0 or an integer of 1 to 200; m is 0 or an integer of 1 to 200; p is 0 or an integer of 1 to 10,000; q is an integer of 1 to 100; n + m is not 0, and the order of bonding of D1, FAE, AE, and Y is not specified; A and B are the same or different and each is a phenyl group which may have fluorine atom and/or a crosslinkable functional group, -COOH group, -OR₂ where R₂ is hydrogen atom or an alkyl group which may have fluorine atom and/or a crosslinkable functional group, an ester group or a carbonate group (when an end of D is oxygen atom, A and B are not a -COOH group, -OR₂, an ester group and a carbonate group) (claim 1, claim 2), where A and B correspond to the R_a and R_y groups (The functional group is present for B) of the instant claim, respectively.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
18-Aug-08

/N. M. B./
Examiner, Art Unit 1796
8/4/2008